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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/594,873 | 06/15/2000 | Fabienne Betting | 14XZ00087 | 8908 |

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09/11/2002

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EXAMINER

YANG, RYAN R

ART UNIT

PAPER NUMBER

2672

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4

Please find below and/or attached an Office communication concerning this application or proceeding.

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/594,873 | BETTING ET. AL. | |
| | Examiner | Art Unit | |
| | Ryan R Yang | 2672 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-12 are pending in this application. Claim 1 is independent claims. This action is non-final.
2. This application claims foreign priority dated 6/21/99.
3. The present title of the invention is "Method of visualization of a part of a three-dimensional image".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-4, 7, 8 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Neff et al. (6,424,464)

As per claim 1, Neff et al., hereinafter Neff, discloses a method of visualization of a part of a three-dimensional image, wherein the part is defined by a finite predetermined volume, ("An enlarged computer image of seismic data is displayed on a concave three-dimensional surface having a shape corresponding to the selected data extracted from a three-dimensional seismic volume", Abstract) the center of which is located on an element of interest present in the three-dimensional image ("in Fig. 9, the computer program is provided with physical data relating to the desired dimensions of the surface to be modeled, and s selected reference point within the modeled space", column 9, line 32-35).

6. As per claim 2, Neff demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses the final three-dimensional image is obtained in the predetermined volume by:

a) selecting a point on the element of interest ("the computer program is provided with physical data relating to the desired dimensions of the surface to be modeled, and s selected reference point within the modeled space", column 9, line 32-35),

b) creating in the three-dimensional image a volume whose dimensions are predetermined and whose center is the point on the element of interest ("The program then proceeds to step 82 for creating the mathematical model of the physical configuration", column 9, line 33-35),

c) making the intersection between the predetermined volume and the three-dimensional image ("in step 88 the intersections between the mathematical model and the data volume are determined", column 9, line 50-52),

d) displaying the part of the three-dimensional image contained in the predetermined volume ("an extracted data set is obtained for mapping data onto the image plane", column 9, line 54-55).

7. As per claim 3, Neff demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses the predetermined volume can be displaced in the three-dimensional image according to a translational motion, while displaying only the part of the three-dimensional image contained at each instant in the predetermined volume (Figure 11 "Navigate 3D data in real-time (translate, rotate, zoom)").

8. As per claim 4, Neff demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses the predetermined volume can be displaced in the three-dimensional image according to a translational motion, while displaying only the part of the three-dimensional image contained at each instant in the predetermined volume (Figure 11 "Navigate 3D data in real-time (translate, rotate, zoom)").

9. As per claim 7, Neff demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses once a part of the three-dimensional image is visualized in the predetermined volume, the dimensions of that predetermined volume can be modified by an operator (Figure 11 "Modify display surface (shape, radius)").

10. As per claim 8, Neff demonstrated all the elements as applied to the rejected independent claim 1, supra, and further discloses once a part of the three-dimensional

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image is visualized in the predetermined volume, the dimensions of that predetermined volume can be modified by an operator (Figure 11 "Modify display surface (shape, radius)").

11. As per claim 12, Neff demonstrated all the elements as applied to the rejected dependent claim 2, supra, and further discloses the point is selected by means of a cursor (Figure 5A and 5B).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neff et al. as applied to claim 1 above, and further in view of Bamberger (5,970,164).

As per claim 5, Neff demonstrated all the elements as applied to the rejected independent claim 1, supra.

Neff teaches displaying of a selected 3-D image, it is noted that Neff does not explicitly disclose that any part of the three-dimensional image not contained in the cylinder is displayed in degraded mode. However, this is known in the art as taught by Bamberger et al, hereinafter Bamberger. Bamberger teaches a medical diagnosis system in which "desired portions of the digitized image for further image enhancement

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according to a desired image enhancement feature selectable from a plurality of image enhancement features" (Abstract).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Bamberger into Neff because Neff teaches a selective 3-D image displaying method and Bamberger teaches methods of enhancing the image of the region of interest (thus, the rest of the area looks degraded) in order to make a more accurate analysis of the image data.

14. As per claim 6, Neff demonstrated all the elements as applied to the rejected dependent claim 2, *supra*.

Neff teaches displaying of a selected 3-D image, it is noted that Neff does not explicitly disclose that any part of the three-dimensional image not contained in the cylinder is displayed in degraded mode. However, this is known in the art as taught by Bamberger et al, hereinafter Bamberger. Bamberger teaches a medical diagnosis system in which "desired portions of the digitized image for further image enhancement according to a desired image enhancement feature selectable from a plurality of image enhancement features" (Abstract).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Bamberger into Neff because Neff teaches a selective 3-D image displaying method and Bamberger teaches methods of enhancing the image of the region of interest (thus, the rest of the area looks degraded) in order to a make more accurate analysis of the image data.

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15. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neff et al. as applied to claim 1 above, and further in view of Endo et al. (6,169,552).

As per claims 9 and 11, Neff demonstrated all the elements as applied to the rejected claims 1 and 2, respectively, supra.

Neff teaches displaying of a selected 3-D image. It is noted that Neff does not explicitly teaches the predetermined volume is a sphere whose diameter is equal to half of the width of the three-dimensional image display window and the center point of the intended image is at the center of the screen, however, this is known in the art as taught by Endo et al., hereafter Endo. Endo teaches an image displaying method in which "half of the display frame is set as a window, and the original display frame is shifted so that the center portion on the other half display frame is coincident with the center portion of the original three-dimensional map which has been displayed before the window is displayed" (column 28, line 44-49).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Endo into Neff because Neff teaches an image displaying method and Endo teaches the intended image can be displayed at the center and occupy half of the screen for the better viewing of the intended image.

16. As per claim 10, Neff demonstrated all the elements as applied to the rejected dependent claim 2, supra.

Neff teaches displaying of a selected 3-D image. It is noted that Neff does not explicitly teaches the predetermined volume is a sphere whose diameter is equal to half of the width of the three-dimensional image display window, however, this is known in

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the art as taught by Endo et al., hereafter Endo. Endo teaches an image displaying method in which "half of the display frame is set as a window, and the original display frame is shifted so that the center portion on the other half display frame is coincident with the center portion of the original three-dimensional map which has been displayed before the window is displayed" (column 28, line 44-49).

Thus, it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Endo into Neff because Neff teaches an image displaying method and Endo teaches the intended image can occupy half of the screen for the better viewing of the intended image.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Inquiries

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Ryan Yang** whose telephone number is **(703) 308-6133**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Michael Razavi**, can be reached at **(703) 305-4713**.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ryan Yang
September 5, 2002



**MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600**